



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,476	06/04/2001	Firooz Rasouli	7693/81873	5753

7590 02/25/2004

Welsh & Katz, Ltd.
Bryan C. Wallace
22nd Floor
120 South Riverside Plaza
Chicago, IL 60606

EXAMINER

HANNE, SARA M

ART UNIT	PAPER NUMBER
----------	--------------

2173

DATE MAILED: 02/25/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,476

Applicant(s)

RASOULI, FIROOZ

Examiner

Sara M Hanne

Art Unit

2173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/4/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

BA HUYNH
PRIMARY EXAMINER

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 7 recites the limitation "said at least one engaging body part" in line 4 of Claim 7 on page 21. There is insufficient antecedent basis for this limitation in the claim.

3. Claim 21 recites the limitation "the receiving" in line 8 of Claim 21 on page 23. There is insufficient antecedent basis for this limitation in the claim, the examiner treats this limitation as "the receiving device" for examining purposes.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-10, 24-26, 28-30, 32-34 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Lander et al. US Patent 5982880.

In reference to Claim 1, Lander et al. teaches a virtual remote ("wireless", Claim 10) touching system including a sensing broadcasting unit that can sense a user's tactile characteristics (control device, Bio-feedback sensors) and create electronic simulation data from them (regulating device). They further teach a

Art Unit: 2173

system to transmit the simulation data from the broadcasting unit to a receiving simulating unit (tactile output device) that uses the data to recreate the tactile characteristics for a receiving user (Column 2, lines 16-24 and Column 12, lines 56-64).

In reference to Claim 24, Lander et al. teaches a tactile sensing unit with an interfacing device (Fig. 3, ref. No. 54 or Fig. 4, ref. No. 55), a sensor to detect tactile data (Biofeedback sensor) or an engaging user and to send the indicating signal (Regulating device), and a data acquisition apparatus for receiving the indicating signal from the sensor (control device). See also Claim 1 rejection *supra*.

In reference to Claim 2, Lander et al. teaches the electronic data sent between the broadcasting unit and the transmitter to be sent via Internet ("web-browser means", Claim 6).

In reference to Claim 3, Lander et al. teaches the transmission of simulation data to be sent using a real-time Internet application so the receiving user can instantly touch the tactile simulation ("live and real-time interactive controllers", Column 12, line 26 and the example in Column 1, lines 49-58).

In reference to Claim 4, Lander et al. teaches the broadcasting unit to be comprised of a broadcasting device (regulating device), a base (host computer), a sensor (input sensor), and a data acquisition device (control device).

In reference to Claims 5 and 25, Lander et al. teaches a tactile sensor connected to the broadcasting device to detect tactile characteristics of an engaging body part ("the actual movement of such a device is monitored by

Art Unit: 2173

absolute or relative optical encoders that provide electrical signals indicative of that movement", Column 1, lines 65-67) and the broadcasting device generating a signal to be received by the data acquisition device ("regulating device is provided such as to process the control device 3 signal into an understandable signal for the tactile output device 8.", Column 2, lines 16-18).

In reference to Claim 6, Lander et al. teaches the simulating unit to be comprised of a processing unit (the "processor" of Column 12, line 54), controller (regulator 32), receiving device (tactile output device), a base (Figure 4), and a sensor ("sensors that are connected to the tactile output device", Column 14, lines 1-2). They further teach the receiving device to receive an interfacing body part from the receiving user ("two human beings to interact with each other by touch.", Column 4, lines 30-31).

In reference to Claim 7, Lander et al. teaches a sensor connected to the broadcasting device for detecting the selected tactile characteristic data of the engaging body part (see Claim 5 rejection *supra*).

In reference to Claim 8, Lander et al. teaches the data acquisition device to receive a signal from a sensor and transmit the information to the transmitting system (see Claim 5 rejection *supra*).

In reference to Claims 9, 26 and 33, Lander et al. teaches a temperature sensor ("temperature changing output", Column 2, line 5).

In reference to Claims 10, 28 and 34, Lander et al. teaches a moisture sensor ("body moisture", Column 8, line 38)

Art Unit: 2173

In reference to Claims 29 and 37, Lander et al. teaches a movement sensor capable of sensing vibrations of the engaging body part (Claim 4, Column 16) and relaying the signal to the data acquisition device (see Claim 5 rejection *supra*).

In reference to Claim 30, Lander et al. teaches the receiver to be hand shaped ("a human hand", Figures 2-4).

In reference to Claim 32, Lander et al. teaches the electronic tactile simulation data to be received from a remote source (Claim 10, Column 16).

In reference to Claim 41, Lander et al. teaches an interfacing device capable of receiving a user's body part and sensing it's tactile characteristics by positioning the part to be engaged with the interfacing device, and generating a data signal representative of the tactile characteristics sensed to be sent to the data acquisition device (See Claim 24 and 25 rejections *supra*). Lander et al. further teaches converting the signal into electronic data form, transferring the signal to data acquisition board, converting the signal into transferable simulation data to the transmitting device (See Claim 5 rejection *supra*), and the transmitting device able to receive the signals, convert them using a controller to electronic signals, simulate them to a receiving user's body part positioned with the interface after they have been converted into an indicating signal (See Claim 8 rejection *supra*).

Claim Rejections - 35 USC § 103

Art Unit: 2173

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 11-23, 27, 31, 35-36 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lander et al., US Patent 5982880, and further in view of Tremblay et al., US Patent 6424333.

Lander et al. teaches the virtual remote touching system of Claim 8 as seen *supra* sensing various tactile feelings and transmitting them across a network to be simulated on a receiving device. While Lander et al. teaches such a touching system, they fail to show the system sensing the surface's roughness, as in Claims 11 and 35, or it's hardness, as in Claims 12 and 27, of the engaging body part as recited in the claims. Tremblay et al. teaches a sensing and transmitting device similar to that of Lander et al. In addition, Tremblay et al. further teaches sensing other characteristics of the engaging body part such as roughness (Column 16, line 54 – Column 17, line 5) or hardness ("Force or pressure sensors", Column 13, lines 55-56). It would have been obvious to one of ordinary skill in the art, having the teachings of Lander et al. and Tremblay et al. before him at the time the invention was made, to modify the virtual remote touching system taught by Lander et al. to include the sensing of roughness and hardness qualities of Tremblay et al., in order to obtain another characteristic to be sensed and transmitted. One would have been motivated to make such a

combination because an additional tactile characteristic for more realistic simulation would have been obtained, as taught by Tremblay et al.

In reference to Claim 13, Lander et al. teaches the detecting sensor to send an indicating signal to the controller so that the controller receives the signal and compares it to the current electronic simulation data ("the new value is subtracted from the old value to determine if there is a difference of the two", Column 4, lines 22-23).

In reference to Claim 14, Lander et al. teaches the receiving device to be made of a synthetic polymeric material ("artificial limb describes any device, that is Dermatologically compatible with a users skin", Column 3, lines 28-30).

In reference to Claim 15, Lander et al. teaches a temperature sensor for detecting the temperature of the receiving device and relaying the indicating signal (See Claim 9 rejection *supra*)

In reference to Claim 16, Lander et al. teaches a moisture sensor for detecting the moisture content of the receiving device and relaying the indicating signal (See Claim 10 rejection *supra*).

In reference to Claims 17 and 36, Lander et al. teaches the virtual remote touching system as seen *supra* sensing various tactile feelings and transmitting them across a network to be simulated on a receiving device. While Lander et al. teaches such a touching system, they fail to show the system sensing the inner surface's hardness, as recited in Claims 17 and 36, of the engaging body part as recited in the claims. Tremblay et al. teaches a sensing and transmitting device similar to that of Lander et al. In addition, Tremblay et al. further teaches sensing

Art Unit: 2173

the hardness (See Claim 12 rejection *supra*) of the inner surface ("various portions internal to, and on the surface of, a physical measured body part", Column 17, lines 2-3). It would have been obvious to one of ordinary skill in the art, having the teachings of Lander et al. and Tremblay et al. before him at the time the invention was made, to modify the virtual remote touching system taught by Lander et al. to include the sensing of hardness qualities of an inner surface of Tremblay et al., in order to obtain a sensing system for internal hardness. One would have been motivated to make such a combination because an additional tactile characteristic for more realistic simulation would have been obtained, as taught by Tremblay et al.

In reference to Claim 18, Lander et al. teaches the receiver to be handshaped ("a human hand", Figures 2-4).

In reference to Claims 19 and 31, Lander et al. teaches the receiver to be mouth shaped ("Any means stimulating the tactile sensory system of a living being can be integrated into this system", Column 14, lines 53-54 and Figure 1)

In reference to Claim 20, Lander et al. teaches a temperature and moisture sensors (Seen *supra*, in the rejection of Claims 9 and 10)

In reference to Claims 21 and 38, Lander et al. and Tremblay et al. teach a moisture sensing and reproduction apparatus (Claim 10 rejection *supra*, and Column 16, line 54 – Column 17, line 5 of Tremblay et al.). However both fail to teach a moisture removing apparatus capable of blowing drying air in the direction of the receiving device to remove moisture from the receiving device as recited in the claims. It would be obvious to one of ordinary skill in the art to

Art Unit: 2173

include the moisture removing apparatus with blow drying capabilities to implement the moisture control system taught by Lander et al. and Tremblay et al. One would have been motivated to make such a combination because a moisture reducing apparatus for real-time or faster response to stimulus moisture reduction would have been obtained.

In reference to Claims 22 and 40, Lander et al. and Tremblay et al. teach a temperature regulating apparatus capable of controlling the temperature according to the temperature of the input (See Claim 9 rejection *supra*).

In reference to Claims 23 and 39, Lander et al. teaches the receiving device to be made of a flexible polymer interface cable of deforming (See Claim 14 rejection *supra*, and "flexible material 50", Column 3, line 6).

Conclusion

The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar sensory interfaces and tactile response devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara M Hanne whose telephone number is (703) 305-0703. The examiner can normally be reached on M-F 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (703) 308-3116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5484.

smh

BA HUYNH
PRIMARY EXAMINER